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Monsanto

MONSANTO INDUSTRIAL CHEMICALS CO.
Sauget, Illinois 62201
Phone: (618) 271-5835

April 3, 1984

Mr. Norman Niedergang
On-Scene Coordinator
Region V USEPA
230 South Dearborn Street
Chicago, Illinois 60604

Dear Sir:

This letter is our response to the questionnaire attached to your letter of 1/13/84. Our answers are as follows:

(1.) No records were found which indicate the W. G. Krummrich Plant has manufactured or processed 2,4,5, Trichlorophenol (2,4,5 TCP). It has manufactured four derivatives of 2,4,5 TCP:

a. Sodium 2,4,5 Trichlorophenate (Santophen 45)
b. Iso-octyl 2,4,5 Trichlorophenoxyacetate (Iso-octyl 2,4,5 T ester)
c. Butyl 2,4,5 Trichlorophenoxyacetate (Butyl 2,4,5 T ester)
d. Iso-butyl 2,4,5 Trichlorophenoxyacetate (Iso-butyl 2,4,5 T ester)

W.G.K. also processed 2,4,5 Trichlorophenoxyacetic acid. This material was received from Monsanto's Nitro West Virginia Plant and used as a feedstock for the 2,4,5, T ester production.

A search of our records noted the following manufacturing dates and quantities:

Chemical	Dates	Quantities (lbs./yr.)
a. Santophen 45	1949	20,000 50% solution
	1950-1953	Unavailable
b. Iso-octyl 2,4,5 T ester	1966	450,000
	1967	500,200
	1968	664,385
	1969	1,367,870
	1970	911,051
c. Butyl 2,4,5 T ester	1966	3,300,000
	1967	3,302,889
	1968	6,122,196
	1969	153,382
d. Iso-butyl 2,4,5 T Ester	1969	44,310

(2.) Our records do not indicate that any of our derivatives were sold as feedstock. The only derivative transferred was 2,4,5 T acetic acid as noted in (1.) during the time of ester production.

A search of our records found no copies of halogenated dioxin analysis reports.

(3.) Santophen 45 was manufactured in an early pilot plant operation. No records of the actual equipment used were found. It was not possible therefore to identify if any other chemicals were manufactured in the equipment.

No records were found which indicate the production of any chemicals other than the esters in the 2,4,5 T ester process.

(4.) A search of our records found that in the Santophen 45 operation waste products were generated in the autoclave and distillation stage. These were collected in drums off of the bottom of the methanol still. A filter stage after the neutralization step also collected some wastes. No reports were found which detailed amounts, compositions, or disposal in this process. There was no specific distillation process employed to remove dioxins nor were any records of dioxin analysis records found.

Manufacturing flow sheets for the 2,4,5 T ester operations indicate that waste products were found in the distilling phase. Process records of the vacuum jet (pulling vacuum on the still) discharged stream at capacity ester production of 13,200,000 pounds/year show:

Pounds/Month Atmospheric, Stream, & Residue Discharge

Toluene	53,300
Alcohol (Iso-buty or Butyl)	53,300
2,4,5 T ester (Iso-butyl or Butyl)	31,200

Records show that from 2/22/71 to 4/19/71, 650,000 pounds of Iso-ocytl 2,4,5 T ester were reworked to reduce dioxin content. This was a special operation not used during noted ester production.

(5.) No descriptions of decontamination procedures were found for any of the mentioned processes.

Santophen 45 equipment records were not found. It is not possible to determine present location of this equipment.

Records show that the departments manufacturing the 2,4,5 T esters were sold to the Edwin Cooper Company, Sauget, Illinois in May of 1971. Our records do not indicate disposition of this equipment.

(5.) Continued

No records were found which show any composition, disposal, or analysis of any decontamination streams.

(6.) No records were found detailing disposal of any collected wastes, though Monsanto personnel probably handled them. Sewered streams were disposed of through the Sauget sewer system.

(7.) There are no wastes or decontamination streams in storage.

(8.) No records of halogenated dioxin testing on the wastes were found.

(9.) Attached are remaining dioxin analyses in accordance with your final question. Note that river analysis results were previously sent to the I.E.P.A. in 1982. Other soil sample results were also previously forwarded to you by A. J. Quick in his transmittal of 2/3/84.

Sincerely,

Rick Tedeschi

A. R. Tedeschi
Senior Engineer
Environmental Affairs

sms

Attachment: (1) Dioxin Analyses

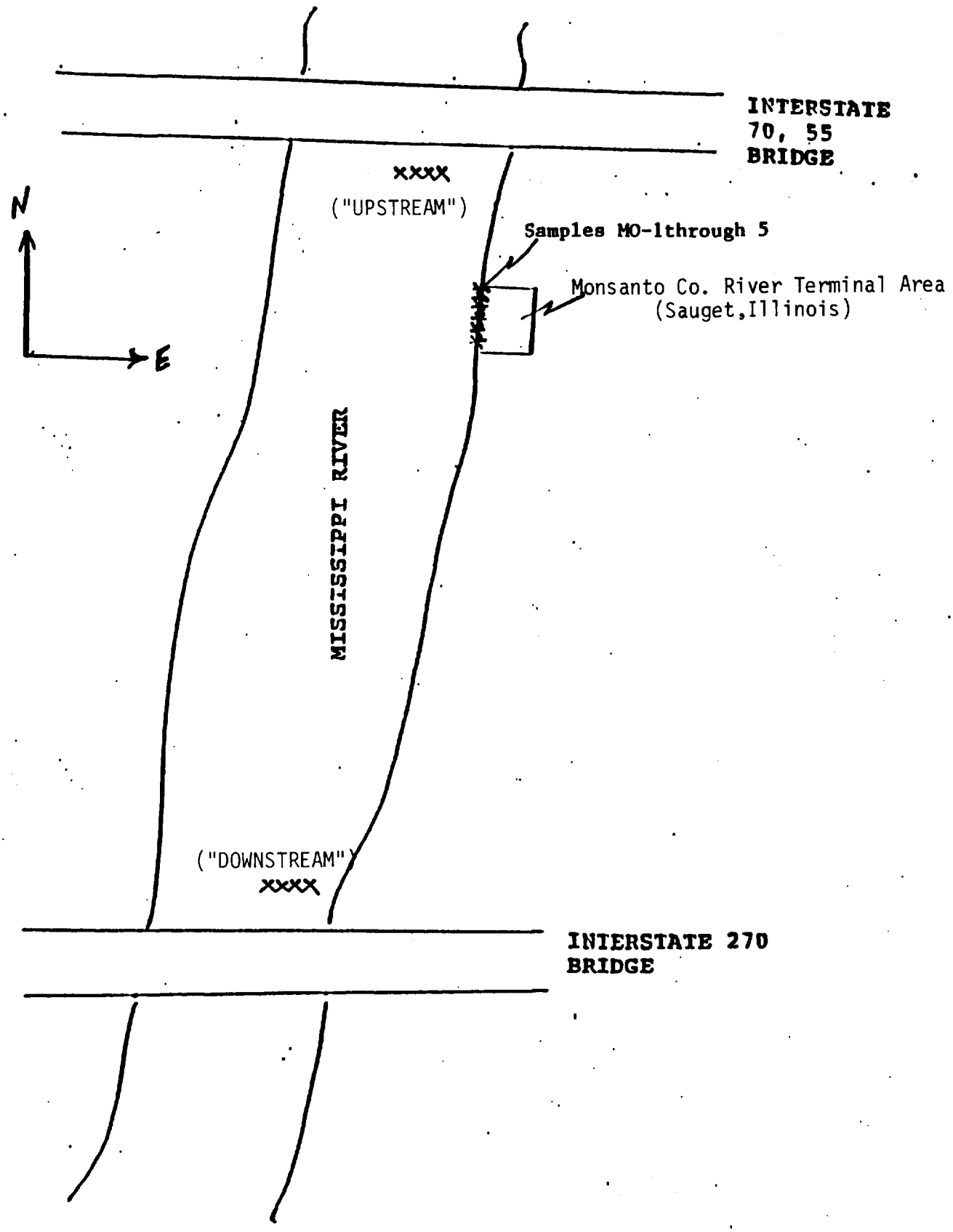
MISSIPPI RIVER WATER ANALYSIS.

(SEE ATTACHED PLOT PLAN FOR SAMPLE LOCATIONS)

ANALYSIS RESULTS

3/10/82

LOCATION OF RIVER
ANALYSIS



ANALYTICAL RESULTS FOR TETRACHLORODIBENZO-P-DIOXIN - PPT

Analyte	Parts Per Trillion SAMPLE ID MO-1	MO-2	MO-3	MO-4	MO-5	MO-6
1,3,6,8-TCDD	ND[A]	Not Analyzed	ND[B]	Not Analyzed	7	Not Analyzed
2,3,7,8-TCDD	ND[A]	Not Analyzed	ND[B]	Not Analyzed	ND[C]	Not Analyzed

ND[A] - Not detected (< 1 ppt)

ND[B] - Not Detected (< 2 ppt)

ND[C] - Not Detected (< 4 ppt)

ANALYSIS OF RIVER WATER SAMPLES FOR CHLORINATED DIBENZO-p-DIOXINS

Sample	ng Dioxin/liter water, parts per trillion							
	Cl_1	Cl_2	Cl_3	Cl_4	Cl_5	Cl_6	Cl_7	Cl_8
Down River #1	ND	ND	ND	ND	ND	ND	ND	ND
Down River #2	ND	ND	ND	ND	ND	ND	ND	ND
Down River #3	ND	ND	ND	ND	ND	ND	ND	ND
Down River #4	ND	ND	ND	ND	ND	ND	ND	ND
Up River #1	ND	ND	ND	ND	ND	ND	ND	ND
Up River #2	ND	ND	ND	ND	ND	ND	ND	ND
Up River #3	ND	ND	ND	ND	ND	ND	ND	ND
Up River #4	ND	ND	ND	ND	ND	ND	ND	ND

NOTE: ND - Not detected

Detection Limit 1ppt